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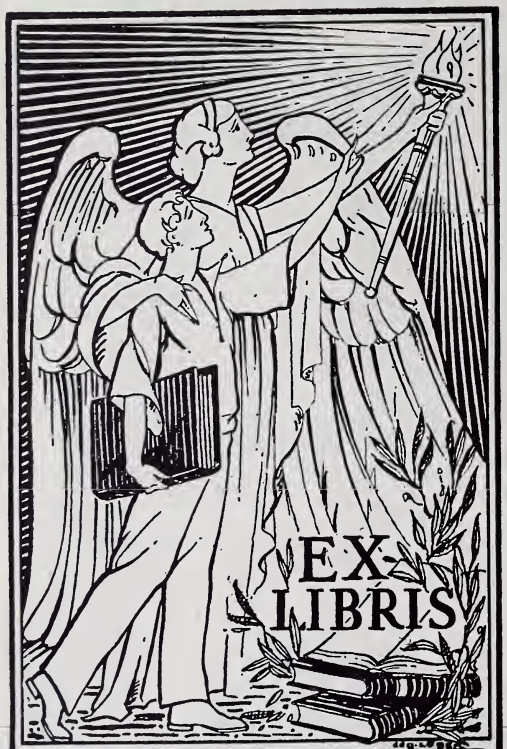

TRACHOMA AMONG THE INDIANS

Report of the Advisory Committee of the American Ophthalmological Society

WILLIAM H. WILDER, M.D., F.A.C.S.
(Chairman)
CHICAGO

This committee report approves in the main the findings and criticisms contained in the report on Indian administration by the Institute for Government Research. Exception is taken to the idea that trachoma is a food deficiency disease. Indiscriminate resort to tarsectomy in the treatment of trachoma is condemned. Failure of the Indian service to provide adequately for medical care should be remedied by transferring the management of health matters among the Indians to the United States Public Health Service.

Since the last report of this committee there has appeared an exhaustive report on "The problem of Indian Administration" by the Institute for Government Research. The latter report is the result of a thorough survey, conducted by a competent staff under the direction of Lewis Meriam, the former head of the Census Bureau.

This staff of investigators devoted eighteen months to their task, nearly half of which time was spent in the field. They visited ninety-five jurisdictions and studied carefully every phase of the government's work.

Unquestionably this is a most opportune and most valuable survey. It points out the defects of the management of the health of the Indians, on their reservations and in the government boarding schools and hospitals. It stresses the deficiency of fresh food in such schools and the lack of properly balanced rations for the children.

The observations of our committee are in many respects in accord with those described in the Meriam report. However, we disagree with the idea, expressed or intimated in the report, that trachoma is a food deficiency disease, for too frequently it has been seen in well nourished as well as in undernourished persons, and it is by no means a frequent accompaniment of malnutrition.

Some years ago, probably influenced by ill advice, the Bureau of Indian Affairs issued an order requiring that all physicians in the Indian service learn to do the operation of tarsectomy for the treatment of trachoma. This resulted in a wild crusade of indiscriminate operating on the eyelids, even in very recent cases of the disease, and in young children before any other treatment had been used. Some overzealous enthusiasts even went so far as to advocate the operation as a preventive of the disease. The resulting disfigurement of the lids, and the difficulty of making subsequent treatments of the conjunctiva because of the contractions, are apparent in numerous cases that we have observed.

When the evils of this course were pointed out to the former Secretary of the Interior, Dr. Hubert Work, he very wisely issued an order to the effect that the operation of tarsectomy should not be practised except in suitable cases, to be determined by the eye specialist in charge.

In our previous report we commended the action of the government in establishing special schools for trachomatous children, to which would be sent from other schools children affected with the disease, there to be treated until cured and then returned to their original schools. The boarding schools of Fort Defiance (Arizona), Shiprock (New Mexico), and Tohatchi (New Mexico) were set aside as such special centers for the treatment of trachoma.

We understand that the operation of this plan has not been extended and has not been carried out as originally proposed. In all the schools that we have visited trachoma cases are present; they are not sent to the special trachoma schools, and, what is worse, they

are not even segregated but mingle freely with the other children in the dormitory, classroom, and playground. Because of this the disease is known to be disseminated among healthy children.

Doubtless this neglect is due to the deficiency in facilities, equipment and service as pointed out by the Meriam report, and is the result of the inadequate appropriation of the government for the Indian service.

Etiology: In the past year there have appeared two trachoma studies by Ida A. Bengtson, Bacteriologist, United State Public Health Service, in the Public Health Reports of August 24, 1928, which, although not yet confirmed by others, are worthy of consideration. (See also American Journal of Ophthalmology, 1929, August, page 637.)

The first considers the origin and nature of the Prowazek-Halberstädter inclusion bodies in trachoma; the second the experimental production in laboratory animals of forms resembling the "elementary bodies" of Prowazek, and the "initial bodies" of Lindner.

The first study involved the examination of two hundred and thirty cases of conjunctival affections, diagnosed as trachoma by members of the staff at the United States Trachoma Hospital at Rolla, Missouri, together with other material excised from the lids in tarsectomies and fifteen entropion operations. In forty-five percent of the cases studied, inclusion bodies were found. The microscopic evidence in the film preparations and sections seems to show that the inclusion bodies in the epithelial cells originated from rod-shaped microorganisms which tend to occur as diplobacilli.

The development of the inclusion body is due to the multiplication of these organisms in the cytoplasm and the subsequent reaction on the part of the cell against the invading bacteria, in consequence of which they are transformed into small reddish-staining coccoid forms designated by Prowazek as "elementary bodies," with the blue staining "mantle", which represents the partially dissolved portions of the bacteria. The "free Lindner initial bodies" appeared to be pleomorphic, or modified forms of rod-shaped bacteria which have been seen rather infrequently outside the cells, and which occur as blue-stained oval or cylindric bodies stained at the rim and bipolarly. Miss Bengtson's comment in regard to these various forms of "inclusion body", "elementary bodies", and "free initial bodies" seems to be very reasonable, namely, "that they are found in the conjunctiva, which on account of its exposure is very liable to the invasion of microorganisms and must, therefore, be unusually rich in protective substances which are probably lytic in action. These act on the bacteria to destroy or inhibit their growth, and it is not surprising that the latter should be changed into forms quite unrecognizable when compared with those occurring in artificial culture mediums containing none of these substances antagonistic to their growth."

In Miss Bengtson's second study, to quote her summary and conclusion, "it was possible to produce experimentally forms corresponding in appearance to the so-called "elementary bodies" of Prowazek and the initial bodies of Lindner, by the inoculation into the conjunctiva of guinea-pigs of certain gram-negative rod-shaped organisms isolated from the conjunctiva of trachoma cases. A study of preparations made a short time after the inoculations suggests that the 'elementary bodies' and the 'initial bodies' represent modifications of the organisms originally introduced which are brought about through the action of lytic substances contained in the conjunctival fluid (tears) and tissues. The results of the work do not prove or disprove that the elementary bodies, initial bodies, or inclusion bodies are concerned etiologically in trachoma. The study tends to show that these bodies, in all probability, are bacterial in character and that the bacteria from which they originated are rod-shaped in form. The fact of their presence in a considerable percentage of trachoma cases is an indication that they may be of etio-

logic significance, but the question cannot be answered definitely as yet.

On invitation of Dr. Procter, who is one of the members of the advisory committee on trachoma of the American Medical Association, Professor Lindner of Vienna visited America last year. He examined one chimpanzee and eighteen macacus monkeys in the Noguchi laboratory and pronounced that they did not have trachoma but a typical folliculosis, basing his opinion on his observation that the conjunctiva between the large prominent granules was pale and clear and that there was no conjunctival secretion.

Later he travelled to Albuquerque to visit the Indian school there. As it was vacation time, only eighty of the usual eight hundred children could be examined, and of these he found twenty had trachoma and none had folliculosis. In all of these twenty cases he found inclusion bodies and initial bodies.

He had the opportunity to examine four of the five cases that Noguchi had used for his experiment, and of these he pronounced that two had typical trachoma and two a normal conjunctiva. Whether these latter had had folliculosis or a mild trachoma that had been healed was not determined.

Among all the cases he examined he found only two with pannus. Our own observations of the relative infrequency of pannus in the trachoma of American Indians are in accord with those made by Lindner. (Report of the Ophthalmologische Gesellschaft in Wien, meeting of February 18, 1929. Klinische Monatsblätter für Augenheilkunde, March, 1929, page 399.)

It is thus quite obvious that the problem of the etiology of trachoma has not yet been solved. However, we understand the Rockefeller Institute is ready to release its material for further study, and two investigators are now at Fort Defiance, under direction of Dr. Procter and Dr. Richards, engaging in further experimentation.

Our committee is strongly and unanimously of the opinion that the welfare of the Indians would be greatly enhanced if all matters that relate to their health or to their diseases could be placed under the management or control of some medical body, suitably equipped and organized to take care of such matters. Such an organization we already have in the United States Public Health Service, which has a record of efficiency that is in striking contrast to the dismal failures of the Indian service.

Almost none of the hospitals in the Indian service come up to the standards set by the American Medical Association or by the American College of Surgeons.

Therefore your committee unanimously recommends that a transfer of the management of health matters among the Indians be made from the Indian medical service to the United States Public Health Service.

In the event of that being brought about, and we have reason to think it may be, it seems there would no longer be any use for the existence of an advisory committee, which we have reason to believe is not especially requested by the present Secretary of the Interior, as it was by Dr. Work, so the Committee therefore asks that you accept its resignation.

(The Committee's resignation was accepted.)

(Chairman's address) 122 South Michigan avenue, Chicago

TRAUMATIC RUPTURE OF THE CHOROID WITH DETACHMENT OF THE RETINA: SPONTANEOUS REATTACHMENT

Stereoscopic photographs

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The changes occurring in the course of a case of traumatic choroidal rupture with extensive hemorrhage and retinal detachment, terminating in spontaneous reattachment, are beautifully shown by the accompanying pairs of fundus photographs. **These may be viewed either with an ordinary stereoscope, or through a pair of plus four or five diopter spheres decentered greatly outward.** . Photographs demonstrated before the Summer Graduate Course in Ophthalmology and Otolaryngology, Denver, June 17 to 29, 1929.

The surgery of ocular injuries is of engaging interest to almost all ophthalmologists. Since the great war and especially following the inauguration of state workmen's compensation laws, accidents to the eyes have assumed a new interest. Many papers have been presented in relation to the diagnosis and treatment of intraocular foreign bodies, but comparatively few have been devoted to the intraocular changes resulting from the impact of large nonpenetrating objects.

Diagrams and charts have been shown to convey the reporter's impression of fundus changes, although more often only word pictures are used to describe the pathologic processes. Much confusion still exists as to the location of ophthalmoscopically visible hemorrhage, the beginning and end of traumatic retinal detachment, and the appearance of a tear in the choroid. So far as the author knows, there has never appeared in the literature the photographic life history of a traumatic detachment of the retina with a rupture in the choroid. Probably the stereoscopic photographs of this and similar cases will materially assist ophthalmologists in drawing conclusions in relation to the time that has elapsed between the injury and certain residual conditions.

The single instance, taken from many, which will assist in the interpretation of similar cases is that of a twenty-three-year-old male who on April 9, 1928, was struck in the left eye by the closed fist of a heavyweight. He was badly mauled but did not lose consciousness. About three and a half days after the accident he first came under observation complaining of a blur before the left eye.

The right side of the face and the right eye were negative, the vision was 20/20, the pupil was 3 mm., regular and active. The media were clear and the disc distinctly and sharply outlined, without fundus lesion.

The left side of the face showed a very extensive ecchymosis extending from the eyebrow to the angle of the mouth. The left eye had vision of 20/70. The 4 mm. pupil responded slowly to light stimulus. There were many dense floating clouds in the vitreous, with a thick, blood-stained film in the lower portion of the fundus.

By reference to photograph 1, this cloud of varied density can be well seen. The darkest regions are thick blood clots occupying three layers. The one at the lower edge of the disc is in the retina. A horizontal streak about two-fifths of the disc diameter below it and to the nasal side is in front of the retina, as is a larger clot which forms the temporal border of the smudge. The third layer is beneath the retina and consists of very dark blood which lies on the choroid and a few gray less definite blood infiltrations which lie between the retina and the choroid in the subretinal space. The disc is edematous and only the temporal portion of it is demarcated from the surrounding retina. The vessels are of normal size and distribution. The central excavation is small because of the encroachment of swollen nerve fibers. The lower one-fifth of the retina is detached. The fluid is murky but sufficiently clear